

CA2ALEX100
A56

Vault 20

1975/76.

ANNUAL REPORT

ALBERTA LEGISLATURE LIBRARY



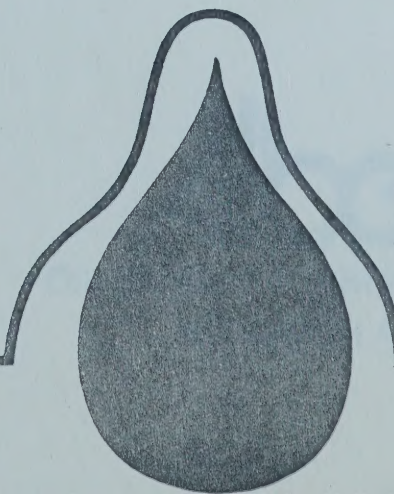
3 3398 00417 1038

MARCH 31

1976

Alberta

OIL SANDS TECHNOLOGY
AND RESEARCH AUTHORITY



TR
873
A5
AL158
1976
C.1

LIBRARY
Energy and Natural Resources

PSN 91-602-622

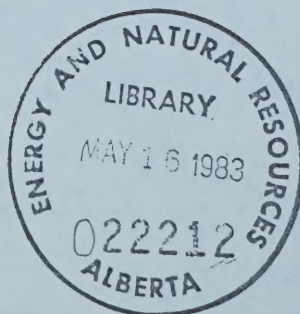
TO HIS HONOUR
RALPH G. STEINHAUER
LIEUTENANT GOVERNOR OF THE PROVINCE OF ALBERTA

Sir,

I have the honour to submit the Annual Report of the *ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY* for the fiscal year ended March 31, 1976.

Respectfully submitted,

DONALD R. GETTY
Minister of Energy and Natural Resources



ANNUAL REPORT

MARCH 31

1976

TABLE OF CONTENTS

1	Introduction
2	Chairman's Report
3	President's Report
4	Executive Committee Report
5	Research and Development
6	Production
7	Marketing
8	Finance
9	Personnel
10	Environmental Protection
11	Public Relations
12	Summary of Operations
13	Financial Statements
14	Notes to Financial Statements
15	Index

Alberta

OIL SANDS TECHNOLOGY AND
RESEARCH AUTHORITY

TABLE OF CONTENTS

	PAGE
Foreword	7
Chairman's Report	8
Members of The Authority	11
Staff and Consultants	12
Appraisal Panels	12
Report of Activities	13
Auditor's Report and Financial Statements	21
TABLES	
1. The Six Most Important Objectives of the Authority	19
2. Funding Requests contained in Applications Received to March 31, 1976	19
3. Recapitulation of Oil Sands Technology and Research Fund	19
4. Summary of Funds Committed and Expended From the Trust Account	20
5. Statement of Receipts and Expenditures from The Trust Fund	20

FOREWORD

Following the announcement by the Premier of Alberta on January 14, 1974, of the availability of 100 million dollars for project "ENERGY BREAKTHROUGH", The Oil Sands Technology and Research Authority Act was passed by the Legislature June 1974, and amended June 1975, to establish the terms and conditions under which this money was to be disbursed.

In creating the Oil Sands Technology and Research Authority, Premier Lougheed stated that a major responsibility of the Authority is to develop the technology needed to establish a commercial in-situ method of oil sands recovery in Alberta at the earliest possible date. In addition, proposals related to the improvement of surface mining technology, particularly those having potential for reducing capital costs, for increasing the efficiency of separation and upgrading, or having improved environmental features will also be considered for support.

Consideration will be given to all applications received. The Authority will endeavour to apportion the funds available each year to ensure that a balanced program of oil sands research is maintained.

FIRST ANNUAL REPORT of the ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY

To the Honourable Donald R. Getty
Minister of Energy and Natural Resources

Sir,

I have the honour to present the first Annual Report of the Alberta Oil Sand Technology and Research Authority for the fiscal year ended March 31, 1976.

This first year of operations has involved two key organizational aspects which will influence the scope and content of the Authority's programs for some years to come.

These are:

- (a) the appointment by cabinet of seven professional scientists and engineers as Authority members, all of whom have had previous direct technical experience with the Alberta oil sands, combined with considerable management experience,
- (b) the establishment of a series of programs to unite the efforts of government, industry and universities in a co-ordinated attack on the technical barriers impeding the development of the Alberta oil sands.

During the year, the Authority members met 74 times in a concerted effort to become operational in the shortest possible time. The Authority committed \$5.2 million for research projects, of which \$2.2 million has been expended. Every attempt has been made to initiate a balanced research program, with emphasis on in-situ recovery, but duly reflecting the need for improved technology in a number of other areas of oil sand recovery and processing. A compilation of the major initiatives of the Authority during the past year are given in the section entitled "*Activities*".

During the Authority's first year of operations several important policy decisions were adopted and one legislative change was made to the Act, as follows:—

POLICY ON TECHNOLOGY

The Authority will accumulate, retain and make available oil sands technology on a commercial basis, so that the best technology is available to all who can benefit, at reasonable rates, bearing in mind the best interest of Albertans.

POLICY FOR AWARDING FUNDS AND CONTRACTS

The guiding principle for awarding research funds and contracts is merit. In the early stages of a research program, the Authority is not unduly concerned about the origin of the concept or the geographic location of the initial experimentation. However, once the concept has crystallized, and an on-going program identified, every reasonable effort will be made to bring the program to Alberta.

In hiring consultants and contractors the Authority has adopted the policy of seeking the services of Alberta-based expertise first, Canadian second, and non-Canadian third. The Authority recognizes that efficiency comes with experience, and experience will only come with direct intimate involvement with oil sand technology.

POLICY ON IN-HOUSE FACILITIES

At this time, the Authority has decided not to construct any research facilities of its own but will make use of existing capabilities. When needed, the Research Council of Alberta has agreed to act as the Authority's technical arm. This will give the Authority the back-up support of highly qualified staff and sophisticated laboratory equipment. This close association with the Council will be balanced by an arms-length approach when considering contract proposals submitted by the Council. The Council is free to make research proposals to the Authority, but will not receive preferential treatment.

AMENDMENTS TO ACT

On June 25, 1975, Bill 26 was passed to amend the Act to provide funds for research on reservoirs which contain heavy oil with an A.P.I. gravity less than 20. This amendment was made to bring recovery research on the Lloydminster reservoirs under the jurisdiction of the Authority because of the similarity in recovery and upgrading techniques to those required for the oil sands.

The Authority is very pleased with the spirit of collaboration which has been expressed by oil sand investigators in both the industrial and academic sectors. All those involved have sensed, and responded to, the urgency in meeting this important Alberta technological challenge.

Respectfully submitted,

C. W. BOWMAN, P.ENG.
Chairman

MEMBERS OF THE AUTHORITY

CHAIRMAN

Dr. C. W. Bowman

VICE-CHAIRMAN

Mr. M. A. Carrigy

MEMBERS

Dr. E. E. Ballantyne

Dr. P. E. Gishler

Mr. R. D. Humphreys

Mr. E. P. Johnson

Mr. F. A. Kidd

HEAD OFFICE

Petroleum Plaza, South Tower

9915 - 108 Street

Edmonton, Alberta

T5K 2G8

APPRAISAL PANELS 1975

UNIVERSITY OIL SANDS RESEARCH EVALUATION PANEL

Dr. L. G. Hepler, *Chairman*, University of Lethbridge
Dr. J. B. Hyne, University of Calgary
Dr. E. L. Tollefson, P.Eng., University of Calgary
Dr. O. P. Strausz, University of Alberta
Dr. D. L. Flock, P.Eng., University of Alberta

In-SITU EVALUATION PANEL

Mr. J. H. Nicholls, P.Eng., *Co-Ordinator*, Consultant
Dr. D. W. Bennion, P.Eng., University Professor
Mr. R. G. Evans, P.Eng., Energy Resources Conservation Board
Mr. W. D. C. MacKenzie, Consultant

MINING EVALUATION PANEL

Mr. W. G. Brissenden, P.Eng., Consultant
Mr. G. H. Stephenson, P.Eng., Consultant

STAFF

Mr. J. H. Nicholls, P.Eng., Manager — In-Situ Projects
Mr. G. A. Villett, Registrar
Mrs. Gwen Rendle, Secretary to Chairman
Mrs. Shelagh Reimond, Secretary

Accounting and Personnel services were provided by the
Department of Energy and Natural Resources

CONSULTANTS TO STAFF

Mr. W. H. Prior, P.Eng., Upgrading Processes
Dr. C. T. Steele, Evaluations
Mr. P. Marshall, Information

REPORT OF ACTIVITIES

UNIVERSITY OF MICHIGAN LIBRARY

Dr. J. H. ...
...
...
...
...

LOCAL EXHIBITION

...
...
...
...
...

GENERAL INFORMATION

...
...
...

STAFF

...
...
...
...

...
...
...

CONSULTANTS TO STAFF

...
...
...
...

REPORT OF ACTIVITIES

The following is a summary of the eleven most important activities of the Authority from its inception to March 31, 1976. These highlights should be read in conjunction with the tables giving summaries of expenditures.

1. In collaboration with industry and professional associations, (CPA, IPAC, APEGGA, CIM), the definition of the six most important objectives of the Authority (Table I), was developed. The number one priority is the development of an in-situ recovery process for each major oil sand reservoir type.
2. Guidelines for in-situ field programs, to be carried out in 50/50 partnership with Industry, were published. Twenty applications covering all four oil sand deposits, Peace River, Wabasca, Cold Lake, Athabasca and carbonate reservoirs were accepted under these guidelines on November 1, 1975. A technical appraisal panel was established to assist the Authority in the analysis of these proposals, as part of a selection process targeting for a June 1, 1976 decision. A key aspect of these programs is that ownership of the technology will reside with the Authority, with future licensing income being shared equitably between the Authority and its industry partners. A similar call for proposals related to the heavy oil deposits is planned.
3. The Authority has awarded a \$2.8 million contract to the Research Council of Alberta to construct and operate two formation test beds for the evaluation of new in-situ recovery processes. The larger of these beds will be capable of taking 4,000 lbs. of oil sands and will allow the testing of oil displacement concepts at much lower cost than in the field. These facilities will be made available to support the larger field experimental programs referred to above.
4. The Authority signed an agreement with the Research Council of Alberta to establish and operate an Oil Sands Information Centre for a five year period. Information from the Centre will be provided in an index, or abstract, form and will be available to individual researchers and libraries on a subscription basis. The Centre plans to develop a system for on-line computer retrieval of all pertinent data on the oil sands.
5. The Government of Canada's hydrocracking process has the potential for providing a higher liquid yield than currently practised technologies for upgrading the bitumen and Lloydminster type crude. To assess the merits of this process, the Authority awarded two contracts to Canadian consultants located in Alberta. Study #1 conducted by Associated Engineering Services Limited, Edmonton, involves the quantification of the potential advantages of hydrocracking over competitive technology. Study #2, conducted by Acres Consulting Services Limited, Calgary, included the size, design and site selection for a large pilot unit required as an intermediate step in any projected scale-up of this technology. These studies will assist the Authority in making a decision whether to participate in the further development of hydrocracking.
6. The utilization of coke produced by conventional coking processes has been identified as an area for Authority support. The most recent process developed in this area is "Flexicoking", which converts the coke as it is formed into low B.T.U. fuel gas. Since sulphur can be removed from this gas by existing technology, the problem of the emission of sulphur dioxide produced from burning the high-sulphur coke directly as fuel is greatly reduced. The Authority purchased 15,000

- barrels of bitumen from Great Canadian Oil Sands Ltd., and arranged for the processing of it in a 1,000 BPD Flexicoking demonstration unit, in Baytown, Texas. The facility was originally constructed at a cost of 7 million dollars to test heavy conventional petroleum stocks and was about to be taken out of service. If the "Flexicoking" process is used by the oil sands industry in Alberta, the Authority will be paid \$100,000.00 for each Flexicoking unit built in the oil sands area. The total cost of the demonstration was approximately \$750,000. The expenditures for the purchase and delivery of the bitumen was assumed by the Authority, and cost \$354,000. The cost of operating the pilot unit itself was paid by interested petroleum companies. Two reports describing the processing of the Athabasca bitumen at Baytown will be made available to the industry on a cost-recovery basis.
7. The Authority held a Universities' Workshop Seminar on October 15-16, 1975 to review research work presently underway or planned at a number of Canadian universities. This was the first in a series of university seminars to bring Canada's academic community fully into the search for improved oil sands technology.
 8. A University Oil Sands Research Evaluation Panel has been established to assist the Authority in the appraisal of research proposals submitted to the Authority by scientists at Canadian universities. As of March 31, twenty-nine proposals were submitted by university researchers. This program is intended to enlist the assistance of senior Canadian university scientists and engineers in developing new concepts for oil sands technology.
 9. Twenty-five scholarships and eight fellowships have been made available over the next six year period for oil sands research at the University of Alberta, the University of Calgary, and Lethbridge University. This program will cost approximately \$780,000 and will encourage scientists and engineers at Alberta universities to engage in oil sands research. The scholarships will be held by graduate students for a two-year period and the research carried out will normally lead to either a Master's or Doctoral Degree. The fellowships are intended to assist post-doctoral level scientists in furthering their research training. It is expected that many of these individuals will eventually enter the industrial research sphere.
 10. Underground mining has been proposed as a method of recovering the deeply buried oil sands, and six proposals for accomplishing this have been submitted to the Authority. The Authority has appointed a two-man appraisal panel to assist in the analysis of these proposals and is targeting for a decision in late 1976.
 11. As part of its search for more efficient and more environmentally acceptable extraction technology, the Authority has commissioned Associated Engineering Services Limited to conduct a preliminary evaluation of the comparative economics of the Lurgi-Ruhrgas direct dry distillation process and the most advanced hot water processes. The results of this study will be used to decide if pilot studies are warranted to test the commercial suitability of the process for the extraction of bitumen from the Athabasca oil sands.

TABLES

TABLE 1**THE SIX MOST IMPORTANT OBJECTIVES OF THE AUTHORITY**

1. At least one in-situ recovery process for each major oil sand reservoir type.
2. More effective, efficient, and environmentally acceptable upgrading technology.
3. Resolution of major technical problems of current surface mining technology.
4. Evolutionary increases in percent recovery from in-situ processes.
5. Alternative surface extraction technology.
6. Conversion of oil sand and heavy oils into higher valued petroleum and mineral products.

TABLE 2.**ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY**

*Funding Requests, contained in applications received to
March 31, 1976*

TYPE OF APPLICATION	NO.	PROJECT VALUE	GRANT REQUESTED
In-Situ	20	\$679,735,000	\$269,443,000
Underground Mining	6	14,197,510	14,197,510
Universities	29	5,542,397	5,542,397
Other	29	15,156,190	15,156,190
	84	\$714,631,097	\$304,339,097

TABLE 3.**ALBERTA OIL SAND TECHNOLOGY AND RESEARCH AUTHORITY**

*Recapitulation of Oil Sands Technology and Research Fund
as at March 31, 1976*

Total Fund established by Act		\$100,000,000
Funds Expended on Approved Projects	\$ 2,174,590	
Additional Amounts Committed for Approved Projects	3,023,759	
Total Value of Approved Projects	\$ 5,198,349	
Balance of Fund Uncommitted	94,801,651	
	<u>\$100,000,000</u>	<u>\$100,000,000</u>

TABLE 4.**ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY**

Trust Account
Summary of Funds Committed and Expended
To March 31, 1976

PROJECT	RESOLUTION NO.	FUNDS COMMITTED	FUNDS EXPENDED	BALANCE
Flexicoking Test	75-3	\$ 353,829	\$ 353,829	
Oil Sands Information Centre	75-4	1,000,000 (1)	200,000	\$ 800,000
Hydrocracking Economics	75-5	75,000	75,000	
Hydrocracking Engineering	75-6	139,520	139,520	
ARC Test-Beds etc. Program	75-7	2,800,000 (2)	1,400,000	1,400,000
Scholarships and Fellowships	76-1	780,000		780,000
Lurgi Rhurgas Economics	76-2	50,000	6,241	43,759
TOTAL		\$5,198,349	\$2,174,590	\$3,023,759

(1) Payable \$200,000 per year for 5 years.

(2) Balance payable October 1976.

TABLE 5.**ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY**

Trust Fund
Statement of Receipts and Expenditures
For the Period April 1, 1975 to March 31, 1976

Receipts		
Transferred from Fund to Trust Account		\$2,318,780
Expenditures		
Flexicoking Test	\$ 353,829	
Oil Sands Information Centre	200,000	
Study on Hydrocracking Economics	75,000	
Study on Hydrocracking Engineering	139,520	
Alberta Research In-situ Program	1,400,000	
Study on Lurgi Process Economics	6,241	
	<u>\$2,174,590</u>	
Balance in Trust Account	144,190	
	<u>\$2,318,780</u>	<u>\$2,318,780</u>

AUDITOR'S REPORT AND FINANCIAL STATEMENTS



OFFICE OF THE PROVINCIAL AUDITOR

AUDITOR'S REPORT

To the Members of the
Alberta Oil Sands Technology
and Research Authority

I have examined the balance sheet of the Alberta Oil Sands Technology and Research Authority as at March 31, 1976 and the statements of capital surplus, revenue and expenditure, administrative operations, revenue, expenditure and unexpended funds, Oil Sands Technology and Research Fund for the year then ended. My examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as I considered necessary in the circumstances.

In my opinion these financial statements present fairly the financial position of the Authority as at March 31, 1976 and the results of its operations for the year then ended, in accordance with generally accepted accounting principles.

"DOUGLAS W. ROGERS", C.A.
Provincial Auditor.

Edmonton, Alberta
September 10, 1976

ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY

BALANCE SHEET*as at March 31, 1976***ASSETS**

Current:		
Cash		\$220,497
Fixed:		
Office equipment, at cost	\$ 31,461	
Less: Accumulated depreciation	<u>3,146</u>	
		<u>28,315</u>
		<u>\$248,812</u>

LIABILITIES

Current:		
Accounts payable	\$ 76,307	
Capital surplus, Statement B	28,315	
Unexpended funds, Statement D	<u>144,190</u>	
		<u>\$248,812</u>

The accompanying notes are part of these financial statements.

ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY

STATEMENT OF CAPITAL SURPLUS

for the Year Ended March 31, 1976

Furniture and equipment purchased from operations	\$ 31,461
Less: Depreciation for the year	3,146
Balance at end of year	<u>\$ 28,315</u>

ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY

STATEMENT OF REVENUE AND EXPENDITURE
ADMINISTRATIVE OPERATIONS*for the Year Ended March 31, 1976*

REVENUE

Contributions by the Province of Alberta	<u>\$374,972</u>
--	------------------

EXPENDITURE

Fees and commissions	176,498
Salaries and wages	108,906
Furniture and equipment purchases	31,461
Travelling and entertainment	20,604
Agreements for labour services	14,700
Freight and express	6,028
Employee benefits	4,470
Materials and supplies	4,065
Advertising	3,135
Equipment rental	2,173
Telephone and telegraph	2,112
Postage	694
Equipment maintenance	126
	<u>374,972</u>
Excess of revenue over expenditure	<u>\$ —</u>

Digitized by the Internet Archive
in 2026 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library

Statement D

ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY

STATEMENT OF REVENUE, EXPENDITURE AND UNEXPENDED FUNDS
OIL SANDS TECHNOLOGY AND RESEARCH FUND

for the Year Ended March 31, 1976

REVENUE

Contributions by the Province of Alberta (Note 2)	<u>\$2,318,780</u>
---	--------------------

EXPENDITURE

Oil sands research centre	1,400,000
Bitumen upgrading research	574,590
Oil sands information centre	<u>200,000</u>
	2,174,590
Excess of revenue over expenditure	<u>\$ 144,190</u>
Unexpended funds at end of year	<u>\$ 144,190</u>

ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY

NOTES TO THE FINANCIAL STATEMENTS

March 31, 1976

Note 1 Authority

The Alberta Oil Sands Technology and Research Authority operates under the authority of The Oil Sands Technology and Research Authority Act, Chapter 49, Statutes of Alberta 1974.

Note 2 Contributions by the Province of Alberta

As at March 31, 1976 amounts totalling \$2,318,780 had been transferred by the Provincial Treasurer to the Oil Sands Technology and Research Fund. Section 19 of The Oil Sands Technology and Research Authority Act provides for transfers of advances not to exceed \$100,000,000. The total funds expended and committed to March 31, 1976 are summarized as follows:

Expenditure to March 31, 1976, Statement D	\$2,174,590
Additional amounts committed for approved projects as at March 31, 1976	<u>3,023,759</u>
	<u>\$5,198,349</u>

Note 3 Anti-Inflation Program

Pursuant to an agreement dated February 18, 1976 between the Government of the Province of Alberta and the Government of Canada, the Authority is subject to controls on compensation paid to its employees as specified in The Anti-Inflation Act. The effective date of these controls is October 14, 1975.

